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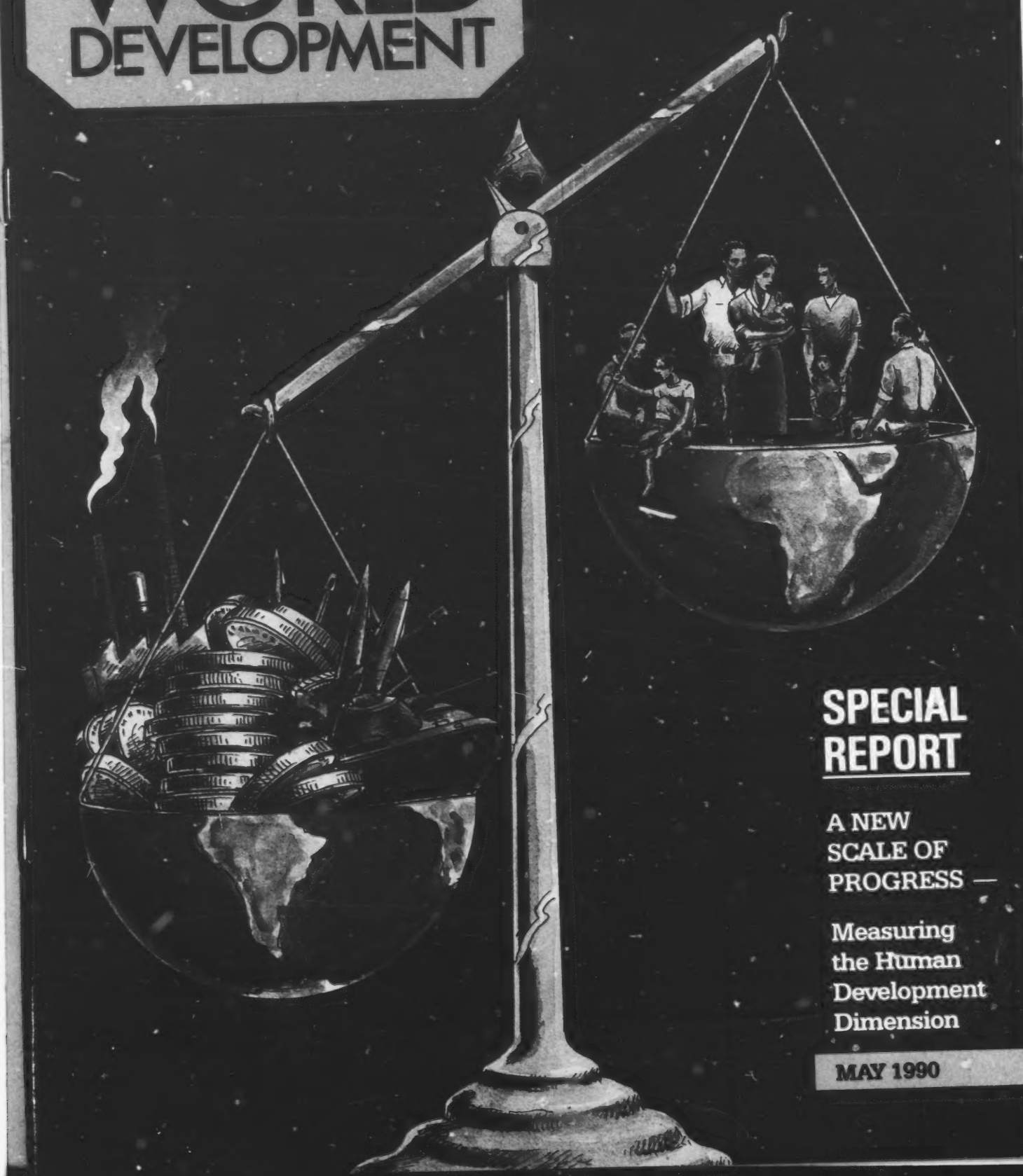
WORLD DEVELOPMENT



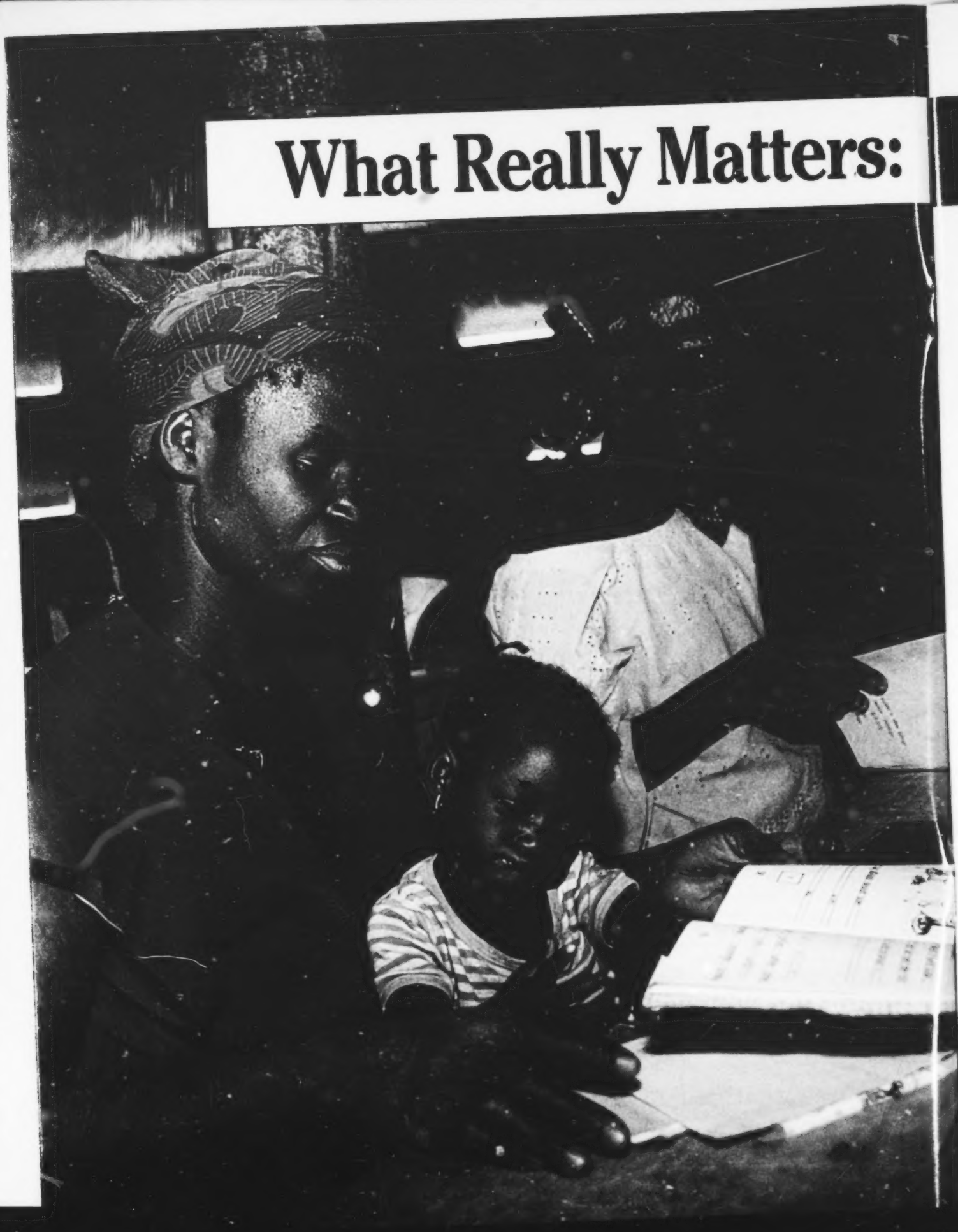
SPECIAL REPORT

A NEW SCALE OF PROGRESS —

Measuring the Human Development Dimension

MAY 1990

What Really Matters:



Human Development

This report is about people — and about how development enlarges their choices. It is about more than GNP growth, more than income and wealth and more than producing commodities and accumulating capital. A person's access to income may be one of the choices, but it is not the sum total of human endeavour.

— Human Development Report (1990)

By Peter Gall

United Nations, New York — For years, economists, politicians and development planners have measured average per capita income to chart year-to-year progress or decline within a country. As a result, a great deal of national development activity was focused on economic growth, often neglecting the human dimension of development. What was needed was a new way to measure development — human development — and a new strategy to meet human needs.

Now there *is* a way to measure human development. A team of leading scholars has created a new Human Development Index (HDI) for the United Nations Development Programme (UNDP). *Human Development Report (1990)*, to be published annually for UNDP, quantifies the human condition and ranks countries by their success in meeting human needs. It also examines why some countries lag behind and recommends concrete steps to move countries forward. The result is a fresh and uncompromising look at how people's lives are enriched or impoverished throughout the world, in rich countries and poor.

Even countries of low per capita gross national product (GNP) may rank high on the Human Development Index — that is, their people live relatively long lives, are mostly literate and generate enough purchasing power to rise above poverty. On the other hand countries with high per capita GNP may still have low rates of human development. The difference lies in the way national leaders set their priorities and allocate government funds, and in the degree of freedom that citizens enjoy to act on their choices and influence their own lives.

Japan comes out with the highest HDI ranking. For the most recent years for which data is available (1987 for life expectancy and income, 1985 for literacy), average life expectancy in Japan was 78 years. Adult literacy was 99 per cent. The average real income level, adjusted to reflect purchasing power, was US$13,135 (lower than in nine other developed countries).

At the other end of the spectrum is Niger, with life expectancy of 45 years, literacy of 14 per cent and average adjusted real income of $452. Among poorer countries, the highest human development ranking goes to Costa Rica, which has no standing army, boasts a life expectancy of 75 years, a literacy rate of 93 per cent, and average adjusted real income of $3,760.

The report zeroes in on several key questions. Does a government care more about economic development alone or about health care and education as well? Does it spend the money it controls more on armaments or on teachers? Are women just toilers in the fields or do they share in the wealth and responsibilities of a nation?

Educating women speeds the decline in infant mortality.

Japan comes out with the highest HDI.

A. Tannenbaum/Symma

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The answers tell a lot about a country. Brazil's per capita income grew over six per cent a year in the 1970s so that the country is now considered "upper middle-income," but the distribution of that income is "among the worst in the world," says the Report. Brazil's childhood mortality rate is almost twice that of Sri Lanka, a country with one-fifth the per capita income.

Twenty-five developing countries spend more on the military than on education and health. There are eight times more soldiers in the developing countries than physicians. On the other hand, Costa Rica targeted literacy for action, and particularly women's education, so that female literacy rose from 17 per cent in 1960 to 65 per cent in 1980. Educating the women helped speed the decline in mortality of infants and children under five.

The book, which is being published commercially by Oxford University Press, is bound to stir controversy. Not only does it name countries that it feels have ignored human development opportunities, it recommends that international donors attach "benign conditions" as strings to development assistance, such as lower military spending or channeling more money to schools or public health.

Developing countries' military spending on arms holds a particular place of shame in the book, which discloses that annual military costs represented nearly 160 million man-years of income, three times the equivalent military burden of industrialized countries. "Obviously, the poverty of the people of the developing world has been no barrier to the affluence of their armies," the Report concludes.

The book makes two major contributions to development. The first is the creation of the triple-component Human Development Index itself. The authors selected *life expectancy* as one component not only for its own value, but because it speaks to health care delivery and the ability of people to live long enough to achieve goals. *Literacy* not only helps people to get and keep jobs, but to understand their surroundings and culture. *Purchasing power* — per capita income adjusted to account for national differences in exchange rates, tariffs and tradable goods — demonstrates the relative ability to buy commodities and meet basic needs. The Report also recommends policy options for UNDP's own field officers, for leaders in both industrialized and developing countries, for nongovernmental organizations and for academics who both study and help shape development policies.

Developing country military spending holds a particular place of shame in the Report.

Structural Adjustment:

In developing countries, structural adjustment programmes often receive a mixed welcome. Many leaders understand the need to balance budgets, to cut public spending and to free market forces in order to get their economies on track. But they are also aware of the negative consequences, including rising unemployment, declining wages, and cuts in spending on social services that often accompanied the adjustment programmes of the 1980s.

The challenge is to balance budgets without unbalancing human lives, and some countries have found ways to adjust with less pain than most. Chile undertook massive public works programmes, at one time employing as much as 13 per cent of the work force. In Botswana, needy infants and children were monitored carefully, and supplied with food and other support as necessary.

One of the countries that coped best was Zimbabwe. Not long after its independence in 1980, Zimbabwe suffered a series of economic shocks which required adjustment. Some measures taken were orthodox, such as restraining credit growth, reducing subsidies, devaluing the currency and raising interest rates. But the government also took steps that were unusual, restraining dividend payouts, continuing import controls and adopting a more expansionary economic policy than most such packages approved by the International Monetary Fund.

In Zimbabwe, loans were channeled to low-income farmers.

Matthew Naythons/Gamma Liaison

Halden Sygma

the Humane Approach

Indeed, for much of the 1980s Zimbabwe adjusted on its own because it failed to reach agreement with the IMF. At the same time, it continued to protect Zimbabwe's most vulnerable groups.

■ Loans were channeled to low-income farmers, whose share of credit from the Agricultural Finance Corporation more than doubled from 17 per cent in 1983 to 35 per cent in 1986. Those loans and other marketing reforms nearly quadrupled low-income farmers' share of marketed maize and cotton from ten per cent to 38 per cent.

■ Spending on health and education rose from 22 per cent of total government spending in 1980 to 27 per cent in 1984, while allocations for defence and administration dropped from 44 per cent to 28 per cent. Spending on primary education rose from 38 per cent to 58 per cent of the education budget. More money went to preventive health care during those years as well.

■ Special food programmes provided drought relief and a supplementary feeding programme for undernourished children. More than 250,000 children received food supplements at the peak of the drought in 1984.

Because of these conscious policy decisions, the economic costs of adjustment did not become human costs. The infant mortality rate continued to decline, primary school enrolment rose sharply, and malnutrition did not rise despite the drought.

Human Development Index

		Human Dev. Index	GNP per capita rank 1987
Low Human Development			
1	Niger	.116	20
2	Mali	.143	15
3	Burkina Faso	.150	13
4	Sierra Leone	.150	27
5	Chad	.157	4
6	Guinea	.162	31
7	Somalia	.200	23
8	Mauritania	.208	40
9	Afghanistan	.212	17
10	Benin	.224	28
11	Burundi	.235	18
12	Bhutan	.236	3
13	Mozambique	.239	10
14	Malawi	.250	7
15	Sudan	.255	32
16	Central African Rep.	.258	29
17	Nepal	.273	8
18	Senegal	.274	43
19	Ethiopia	.282	1
20	Zaire	.294	5
21	Rwanda	.304	2[illegible]
22	Angola	.304	58
23	Bangladesh	.318	6
24	Nigeria	.322	36
25	Yemen Arab Rep.	.328	47
26	Liberia	.333	42
27	Togo	.337	24
28	Uganda	.354	21
29	Haiti	.356	34
30	Ghana	.380	37
31	Yemen, PDR	.369	39
32	Cote d'Ivoire	.393	52
33	Congo	.395	59
34	Namibia	.404	60
35	Tanzania, U. Rep. of	.413	12
36	Pakistan	.423	33
37	India	.439	25
38	Madagascar	.440	14
39	Papua New Guinea	.471	50
40	Kampuchea	.471	2
41	Cameroon	.474	64
42	Kenya	.481	30
43	Zambia	.481	19
44	Morocco	.489	48

Owen Franklin/Sygma

A significant reduction in population growth is absolutely essential.

One of the keys to enlarging human development lies in deciding how to allocate scarce resources — between expensive hospitals and primary health care, between urban and rural services, between subsidies to powerful groups such as wealthy landowners and weaker groups such as the absolute poor and the homeless. "Such a restructuring of budget priorities will require tremendous political courage," warns the Report.

As a guide for governments and all those involved with development issues, the study yielded a number of conclusions and policy messages. Among them:

Where Does the Money Go —

Money that could be used for human development often goes to military budgets instead, even in the poorest countries. Military expenditures in developing countries have multiplied by seven times over the last 25 years to almost $200 billion, compared with a doubling by the industrialized countries. Three-quarters of the global arms trade today takes place in developing countries.

In the industrialized countries there are, on average, 105 soldiers for every 100 teachers, suggesting greater support for war than wisdom. In developing countries, there are on average only 68 per cent as many soldiers as teachers. But as with any indicator, averages can disguise enormous disparities. Costa Rica has no standing army, while Ethiopia, which is engaged in a bitter civil war, has almost five times the number of soldiers as teachers.

■ Removing the immense backlog of human deprivation remains the challenge for the 1990s. It is true that developing countries have made very significant progress towards human development in the last three decades. Life expectancy rose from 46 years in 1960 to 62 years in 1987. The under-five mortality rate was halved. Adult literacy rose from a rate of 43 per cent to 60 per cent. But there are still more than a billion people in absolute poverty, 800 million who go hungry every day and 14 million children who die each year before their fifth birthday.

■ Average measures of progress in human development conceal immense disparities within developing countries, between urban and rural areas, between men and women, between rich and poor. Rural areas have half the access to health services and safe drinking water that urban areas have. High-income groups often pre-empt many of the social service benefits.

■ Respectable levels of human development are possible even at fairly modest levels of income, or as the Report says: "Life does not begin at $11,000, the average per capita income in the industrialized world." Chile, Costa Rica, Jamaica, Sri Lanka, Tanzania and Thailand do far better in human development than in raising incomes, "showing that they have

		Human Dev. Index	GNP per capita rank 1987
Medium Human Development			
45	Egypt	.501	49
46	Lao People's Dem. Rep.	.506	9
47	Gabon	.525	93
48	Oman	.535	104
49	Bolivia	.548	44
50	Myanmar	.561	11
51	Honduras	.563	53
52	Zimbabwe	.576	45
53	Lesotho	.580	35
54	Indonesia	.591	41
55	Guatemala	.592	63
56	Viet Nam	.608	16
57	Algeria	.609	91
58	Botswana	.646	69
59	El Salvador	.651	56
60	Tunisia	.657	70
61	Iran, Islamic Rep. of	.660	97
62	Syrian Arab Rep.	.691	79
63	Dominican Rep.	.699	51
64	Saudi Arabia	.702	107
65	Philippines	.714	46
66	China	.716	22
67	Libyan Arab Jamahiriya	.719	103
68	South Africa	.731	82
69	Lebanon	.735	78
70	Mongolia	.737	57
71	Nicaragua	.743	54
72	Turkey	.751	71
73	Jordan	.752	76
74	Peru	.753	74
75	Ecuador	.758	68
76	Iraq	.759	96
77	United Arab Emirates	.782	127
78	Thailand	.783	55
79	Paraguay	.784	65
80	Brazil	.784	85
81	Mauritius	.788	75
82	Korea, Dem. Rep. of	.789	67
83	Sri Lanka	.789	38
84	Albania	.790	61

To Soldiers or Teachers?

The *Human Development Report 1990* has produced a statistical table reflecting some of the highest and lowest ratios of soldiers to teachers.

High soldier-teacher ratio	Armed forces as percentage of teachers
Ethiopia	494
Iraq	428
Oman	275
Chad	233
Democratic Yemen	200
Pakistan	154
Low soldier-teacher ratio	
Costa Rica	0
Mauritius	10
Côte d'Ivoire	13
Ghana	14
Jamaica	20
Brazil	24

directed more of their economic resources towards human progress."

■ Social subsidies are absolutely necessary for poorer income groups. "Simply stated, economic growth seldom trickles down to the masses." Although not too costly — generally less than three per cent of GNP — subsidies establish a safety net. When removed without an alternative net, as in Morocco and China during recent periods of high growth, "the ensuing political and social disturbance has cost far more than the subsidies themselves."

■ Technical co-operation must be restructured if it is to help build human capabilities in developing countries. Instead of development budgets going to the salaries and travel of foreign experts, much more must go to help train national personnel and build institutions that can take on the burden of human development and become self-sufficient. "The yardstick for measuring the success of technical assistance programmes," says the Report, "must be the speed with which they phase themselves out." Also, non-governmental organizations, or NGOs, must be used much more to help people help themselves. The reason: "NGOs are generally small, flexible, and cost-effective."

■ A significant reduction in population growth rates is essential for improvements in human development levels. The share of developing countries in world population is expected to grow from 75 per cent in 1980 to 84 per cent by 2025. The growth, above all in Africa and South Asia, reflects an "urgent need to strengthen programmes of family planning, fertility reduction and maternal and child health care." And if population growth continues while access to international assistance lags and trade outlets continue to shrink in the industrial countries, "the compulsion to migrate in search of better economic opportunities will be overwhelming — a sobering thought for the 1990s."

■ Sustainable development strategies mean more than the protection of natural resources and the physical environment. Any form of debt — financial debt, the debt of human neglect, or the debt of environmental degradation — is like borrowing from future generations. Sustainable development should aim at limiting all these debts.

Reuter/Gamma Liaison

Elections in Mexico: People must be free to exercise their choices.

What Value Freedom?

The Report puts a higher value on human development achievements in countries with a reasonable degree of democracy and a lower value on those with authoritarian governments. "Human freedom is vital for human development," says the Report. "People must be free to exercise their choices in properly functioning markets, and they must have a decisive voice in shaping their political future."

The Report's authors intend to fashion a quantitative measure of freedom, to be included in a future index. Until then, it has listed 15 top countries whose high human development levels have been achieved "within a reasonably democratic political and social framework."

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Priority must be given to Africa.

		Human Dev. Index	GNP per capita rank 1987
High Human Development			
85	Malaysia	.800	80
86	Colombia	.801	72
87	Jamaica	.824	62
88	Kuwait	.839	122
89	Venezuela	.861	95
90	Romania	.863	84
91	Mexico	.876	81
92	Cuba	.877	66
93	Panama	.883	88
94	Trinidad and Tobago	.885	100
95	Portugal	.899	94
96	Singapore	.899	110
97	Korea, Rep. of	.903	92
98	Poland	.910	83
99	Argentina	.910	89
100	Yugoslavia	.913	90
101	Hungary	.915	87
102	Uruguay	.916	86
103	Costa Rica	.916	77
104	Bulgaria	.918	99
105	USSR	.920	101
106	Czechoslovakia	.931	102
107	Chile	.931	73
108	Hong Kong	.936	111
109	Greece	.949	98
110	German Dem. Rep.	.953	115
111	Israel	.957	108
112	USA	.961	129
113	Austria	.961	118
114	Ireland	.961	106
115	Spain	.965	105
116	Belgium	.966	116
117	Italy	.966	112
118	New Zealand	.966	109
119	Germany, Fed. Rep. of	.967	120
120	Finland	.967	121
121	United Kingdom	.970	113
122	Denmark	.971	123
123	France	.974	119
124	Australia	.978	114
125	Norway	.983	128
126	Canada	.983	124
127	Netherlands	.984	117
128	Switzerland	.986	130
129	Sweden	.987	125
130	Japan	.996	126

Fifteen countries with relatively democratic human development

LATIN AMERICA, CARIBBEAN	HDI RANK, 1-130*
Costa Rica	103
Uruguay	102
Trinidad and Tobago	94
Mexico	91
Venezuela	89
Jamaica	87
Colombia	86

ASIA	HDI RANK, 1-130*
Malaysia	85
Sri Lanka	83
Thailand	78

MIDDLE EAST, NORTH AFRICA	HDI RANK, 1-130*
Turkey	72
Tunisia	60

SUB-SAHARAN AFRICA	HDI RANK, 1-130*
Mauritius	81
Botswana	58
Zimbabwe	52

*Of the 130 countries ranked, ranks 1-44 were listed as being of "low" human development, 45-84 of "medium" and 85-130 of "high" human development.

UNDP photo by Brian Randall

The Report calls for changing laws to provide equal opportunity for women.

The book concedes shortcomings in the first Human Development Index. There is not enough data, for example, to pinpoint income distribution in all countries studied. Nor is there an accepted way to measure personal freedom. But the first Report does address the issue of freedom, and lists 15 developing countries which have achieved relatively high levels of human development within a reasonably democratic political and social framework. These countries are Costa Rica, Uruguay, Trinidad and Tobago, Mexico, Venezuela, Jamaica, Colombia, Malaysia, Sri Lanka, Thailand, Turkey, Tunisia, Mauritius, Botswana and Zimbabwe.

In any concerted international effort to improve human development, says the Report, "priority must go to Africa." Even if the international community earmarks an overwhelming share of resources for Africa and patiently helps to rebuild African economies and societies as the Report urges, it will take Africa "at least 25 years to strengthen its human potential, its national institutions and the momentum of its growth."

Africa is the hardest region of the world in which to live. It has the lowest life expectancy, the highest infant mortality rates and the lowest literacy rates — and women's literacy is only 61 per cent that of men. Average per capita income in Africa fell by 25 per cent during the 1980s. To be poor in Africa is to command little in the way of resources and to have little power to change things. To be a poor woman in Africa is to have still less of either.

The Report specifically calls for changing laws to provide women equal access to incomes, employment opportunities, credit and technology, and to offer women far more education and health care, particularly maternal health care. Funds should be directed to safety nets for the poor, such as nutritional support programmes in health clinics and school feeding programmes. To boost the flow of resources to rural areas, more decisions must be made locally and not by central governments. "Such decentralization of decision-making," says the Report, "may be one of the most important ways of reducing rural-urban income gaps."

While most of the Report concentrates on the developing world, the rich, industrialized nations come in for attention, too, as examples of development which often goes astray. In the United States, the number of homeless people has risen tremendously in the past five years, and in the United Kingdom income gaps widened during the 1980s, leading to deepened poverty.

It is the element of freedom, which is immeasurable, that the Report calls "the most vital component of human development strategies." People must be free to actively participate in setting development priorities, formulating policies, implementing projects and choosing who shall run their country so that social goals "do not become mechanical devices in the hands of paternalistic governments." ■

The Making of the Human Development Report

UNDP Photo by Ruth Mamoty

Mahbub ul Haq

By Cherie Hart

If it achieves nothing else, the main author of the Human Development Report hopes that it will drive home the fact that high income alone is no guarantee of success, that even countries at lower income levels can achieve impressive human development.

"High income is not a passport to human development," says Dr. Mahbub ul Haq, former Finance and Planning Minister of Pakistan, who guided the writing of the Report. "Income is not the sum total of human life. GNP does not convey the state of human well-being. It is but one reflection in a complex prism."

Deciding on the other reflections in that prism was no easy feat. The Report took a year to research and write by a team of more than two dozen experts who collected and analyzed data from more than a dozen UN and international agencies.

The evolution of the Report stemmed, in part, from the economic crises of the 1980s. Debt problems triggered international concern that economic adjustments could be achieved, but at high human costs —cuts in wages, paring down of health and education budgets, and a general decline in social services. The Report explores the link between economic growth and human development. It examines why some countries are able to successfully translate income into human progress and why other countries are unable to do so.

The project was a long-time dream of Dr. Haq, who is now Special Advisor to UNDP Administrator William H. Draper III. As Pakistan's Finance and Planning Minister in the early 1980s, Dr. Haq became interested in finding ways to ensure that economic growth also translates into better human progress. The economic growth rate in Pakistan at the time was a high 6.5 per cent a year, while the literacy rate was only 25 per cent and infant mortality was 150 per 1,000 births. Military expenditures had more than quadrupled over ten years, while social sector spending had only doubled. "There was clearly an imbalance between economic growth and social sector advancement," says Dr. Haq. "I wanted to help shape policies that would close that gap".

At the same time, he became chairman of a series of meetings on human development, which were organized by the United Nations Development Programme (UNDP) and the North-South Roundtable of the Society for International Development. Four meetings took place between 1983 and 1988 that attracted leading monetary, financial and development experts from around the world.

"During the final roundtable in Amman, Jordan," says Dr. Haq, "I suggested that since we regularly monitor the progress of economies, why not begin to monitor the state of the human condition?" By Spring 1989, UNDP had contributed US$600,000 and Sweden $200,000 to such an endeavour, and Dr. Haq was asked to gather a team of writers and researchers to formulate the first Human Development Index (HDI).

The team consisted of experts from UNDP, and a panel of consultants that included such distinguished economists and development professionals as Gustav Ranis, Amartya K. Sen, Frances Stewart, Keith Griffin, Paul Streeten and Meghnad Desai.

In May 1989, the team began painstakingly collecting existing statistics that had never before been pulled together in a single volume. "Much of the information was scattered throughout various UN agencies, the World Bank, and the IMF," says Dr. Haq. "We sought the help and support of the entire UN system and its specialized agencies. We simply tapped the strength of this system, then organized and pro-

Women's literacy rates were rarely broken out from total national figures.

cessed a remarkable amount of its data. In a true sense, this Report represents a UN system-wide initiative."

At times, there was simply too much information. During the course of the research, more than fifty tables were compiled. That number was ultimately cut in half. "We wanted to give a comprehensive picture of the human dimension of development," says Dr. Haq, "but we soon realized that a crowd of indicators would have produced a perplexing picture."

Ultimately, the team came up with key social indicators for an index that would capture the essential components of human life: longevity (life expectancy), knowledge (literacy), and basic income needed for a decent living.

Obtaining relevant statistics proved to be an enormous hurdle. "We thought that in this day and age, data on education would be readily available," says Dr. Haq. "But it turned out to be one of the most defective areas of information. While statistics show primary school enrolment rates, they do not accurately reflect how many dropped out of school. In addition, women's literacy rates were rarely broken out from total national figures."

"Disparities within countries — between urban and rural areas, between rich and poor, and between men and women — were the most difficult kinds of information to get," says Dr. Haq. The Report identifies the areas where social data, at the country level, is either missing or incomplete. Other deficiencies in statistics include such areas as nutrition, literacy, social expenditures and distribution of social services by income groups. The publication lays out an agenda for better data collection that will enable the Human Development Index to be used increasingly as a more accurate measure of national progress.

"We want this to be much more than merely another report," says Dr. Haq. "We want it to be a prelude to action." The aim is to encourage governments to set their own human development goals in basic areas such as universal primary education, health coverage, access to safe drinking water, and provision of shelter. For countries that have already reached these levels, says Dr. Haq, other targets could be set. These could consist of providing more access to higher education, and increased technical and scientific training. "The aim is to encourage governments to create their own blueprints for action over the next ten years."

The Report, which will be updated annually, is also designed to be used as a vehicle of information for countries to learn from each other. In shaping their own human development policies, policy makers will be able to study other countries' experiences which are spelled out in the publication.

"This Report will stir a great deal of controversy, as did the idea of GNP (Gross National Product) in the 1940s," says Dr. Haq. "Economists argued then and now that GNP conceals a great many things. You can produce a lot of guns and luxury goods, and you can destroy your environment and still have a high GNP. Critics will claim that our index does not capture all aspects of human development. All we are saying is that this Report incorporates human choices other than income, and consequently is a step in the right direction." ■

Côte d'Ivoire Cuts a Niche in Diamonds

By Christopher McIntosh

William Campbell/Sygma

The raw material: diamonds in their crude form.

Abidjan, Côte d'Ivoire — Those with the skills to transform crude diamonds into the gleaming objects that are prized the world over are usually associated with cities like Amsterdam, Brussels and Tel Aviv.

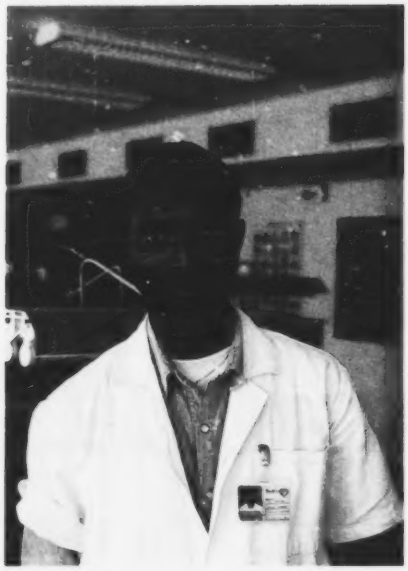
Now, however, the capital of Côte d'Ivoire has spawned its own diamond-cutting enterprise, the first of its kind in West Africa. Hardy's, as the firm is called, is housed behind a guarded steel door on the seventh floor of a modern office block in downtown Abidjan. Here, amid the high-pitched whine of diamonds being honed against whirling metal discs, young Ivorians are undergoing the long and arduous training that the craft requires.

It hasn't been easy. In 1987, after operating for two years on a very small scale, Hardy's was clearly struggling. To develop further it needed a transfusion of capital and more technical expertise. It was a tough time for fledgling companies in Africa. The high cost of repaying Côte d'Ivoire's soaring foreign debts had forced up the cost of credit beyond the reach of most small entrepreneurs. But, by a lucky stroke of timing, a new business promotion organization known as the Africa Project Development Facility (APDF) had just opened an office in Abidjan, and Hardy's appeared to qualify for help.

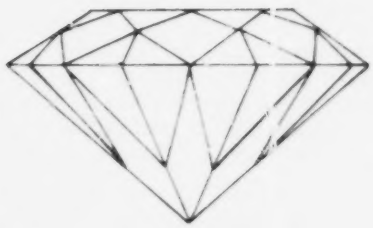
Founded in 1986 by the United Nations Development Programme (UNDP) together with the African Development Bank and International Finance Corporation, APDF exists to provide advice, including help in finding capital, for medium-sized business ventures in Africa. It has two offices on the continent — the one in Abidjan covering west and central Africa, and another in Nairobi covering east and south Africa.

Already, the facility has built up a solid record of achievement at a time when the economic climate is hazardous for entrepreneurs throughout Africa. With APDF's help, some 47 enterprises have so far been nurtured

Youssouf Ouattara, a fully trained cutter.



Most stones are shaped according to the standard pattern known as "brilliant cut" (*below*), designed to produce maximum light refraction.



into thriving concerns. Such firms include an Ivorian fish-processing factory, a cosmetics company in Botswana and a rose-growing venture in Nigeria.

APDF immediately recognized the potential of Hardy's. Diamonds were mined in Côte d'Ivoire and had been traditionally exported only in their crude form. With a relatively small capital infusion they could be turned into a much more valuable, finished commodity.

Hardy's was the creation of 48-year-old Gérard Quintin, a Parisian who trained as an architect, worked for some years as a timber exporter, then acquired a passion for gems. After training at the Gemmological Institute of America in New York and Los Angeles, he set up a small cutting business in Abidjan and took on half a dozen trainees. But he soon encountered a cash flow problem.

Therefore, APDF's initial task was to attract new investors to the firm, since the facility does not provide funding itself. Failing to interest local banks, APDF turned to equity funding through private Ivorian investors, who took a 50 per cent holding in Hardy's. (It is a condition for APDF assistance that a company be at least 50 per cent African-owned.) The main African partner is Kone Brahima, an Ivorian financier, who is now the company's President, while Mr. Quintin, the Managing Director, handles the day-to-day running of the firm. The remainder of the funding came largely from SIFIDA, the Swiss investment bank.

Raising the total capital of some $750,000 took just over a year. The most difficult problem, however, was finding a technical adviser, since diamond-cutting is a profession whose skills are guarded like nuclear secrets. Eventually APDF found two Belgian experts, Alfred Lachowsky and Jacques Zucker, who were willing to provide the essential technical and marketing advice that would enable Hardy's to compete in the tough international diamond market. Now technical partners in Hardy's, Mr. Lachowsky and Mr. Zucker are members of the Antwerp Diamond Exchange, through which most of the firm's diamonds are sold.

Next came the problem of acquiring the necessary official authorization from the Côte d'Ivoire government. "This was extremely difficult," Mr. Quintin explained. "Because ours was a pioneering venture, officials did not know whether to say yes or no. We had to spend a great deal of time negotiating with various ministries. Now the government has decided to encourage mining, and has allowed us a tax exemption on our profits for five years."

Hardy's only began operating commercially in the middle of last year. Until then the firm had to concentrate on training, since it takes up to four years to master diamond-cutting. Most of the trainees come to the firm from the Ivorian School of Jewellery and Related Trades, and their salaries are paid by the Ministry of Technical Training until they are ready to become fully fledged staff members. Of 20 trainees, six are now skilled enough to teach other recruits. Mr. Quintin is pleased by the standards the trainees have attained. "They are very patient," he says, "and you need plenty of patience for this job."

Examining the diamond through a microscope to check the progress of the cutting.

UNDP photos by Christopher McIntosh

The facets are cut by pressing the gem against a whirling cast-iron disc impregnated with diamond dust.

One of the advanced trainees is 27-year-old Youssouf Ouattara, the son of a small farmer from the northern region. He has been with Hardy's for three years. "Diamonds," he says "are beautiful things, and working with them demands precision and much concentration." As a *chef d'atelier* — a fully trained cutter — he earns $500 a month, twice what he would earn as a bank clerk.

When diamonds arrive for cutting from the mines at Seguela or Tortya in the country's central region, they are first examined and measured to determine how they will be worked and how many separate stones each one will yield. Most stones are shaped according to the standard pattern known as "brilliant cut," with a crown and a cone-shaped base. The proportions of the facets are always the same and have been carefully calculated to produce the maximum refraction of light.

In Hardy's main workshop are twenty cutting tables, each equipped with a revolving cast-iron disc like a potter's wheel. The wheel's surface is impregnated with diamond dust. The facets on the diamond are cut by pressing the gem, which is held in a metal clamp, against the rapidly whirling disc. Every few minutes the cutter will lift up the clamp and examine the diamond through a magnifying glass. An experienced professional can cut a stone in three or four days. A student in the early stages at Hardy's will take a month to finish the job, but by the end of training should be able to complete it in ten days.

In addition to its diamond-cutting operations, Hardy's also runs courses in gemmology, and currently has some 20 students. Some are civil servants, others come from the jewellery school or from private jewellers. There is also a contingent from a private jewellery business in Senegal, a nation which is traditionally associated with gold and silver wares but which is now becoming interested in developing a diamond industry of its own.

While Hardy's is a pioneer in West Africa, similar enterprises have opened up elsewhere on the continent, taking advantage of the fact that they can operate at a much lower cost than their counterparts in Brussels or Amsterdam. Diamond-cutting industries are now found in Tunisia, Morocco, Botswana and Mauritius, and the success of Hardy's is but further evidence that the trend away from Europe may continue. ■

Science Struggles to Keep Asian Rice Bowls Full

By David Kinley

Los Baños, Philippines — No one expects to be shivering in Los Baños, renowned for its thermal baths and located on the steamy shores of Laguna Lake, 60 kilometres south of Manila. But once behind the vault-like doors of the "germplasm bank" at the International Rice Research Institute (IRRI), tropically-inspired perspiration vanishes in the sub-freezing cold.

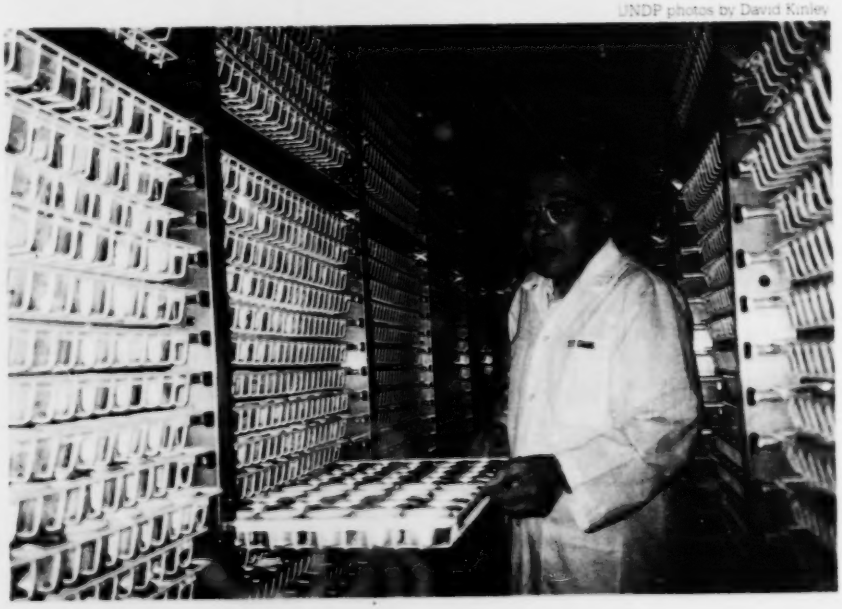
Hermetically sealed in an earthquake-proof structure are shelf upon shelf of vacuum-packed aluminium containers the size of tunafish cans. Inside them are the world's genetic treasury of rice, 84 thousand varieties in all. Asia's future food supply will likely be shaped by the precious, frigid contents.

"Seed is special," says Dr. Te-Tzu Chang, who oversees this gene bank, with its unique assortment of rice seeds meticulously collected from over 100 countries by botanists from IRRI and other institutions. "It's like those draft horses with the big hooves you still see in New York City," he says, searching for an apt analogy. "Today there are racing thoroughbreds and cars to replace most of them. But we need to keep a few of those big, sturdy animals around as their traits may be very useful someday."

Since the inception of IRRI, Dr. Chang and his colleagues have been busily breeding botanical thoroughbreds — the high yielding, fast growing, disease resistant rice hybrids that have served well in the race to produce more food for Asia's burgeoning population. Dr. Chang was a participant in the first successful cross-breeding of Taiwanese and Indonesian rice varieties resulting in IR-8, IRRI's first popular "semi-dwarf" variety in the late 1960s. It was IR-8 that gave birth to the "Green Revolution" that swept Asia in the late 1960s and early 1970s.

Continuing improvements of IRRI's

UNDP photos by David Kinley



Dr. Te-Tzu Chang in IRRI's germplasm bank.

A farmer in central Luzon, a prime rice-producing region of the Philippines.

UNDP photos by David Kinley

Transplanting rice seedlings into test plots at IRRI.

Rice seeds are sorted and stored in gene banks.

"miracle seeds" have made a critical contribution to the region's food balance, relieving some countries, such as India and Indonesia, from chronic food deficits and turning others, such as Thailand, into rice exporters. Improved semi-dwarf varieties are now grown on at least a third of the world's tropical ricelands. IR-36, the progeny of 13 different varieties from six countries released by IRRI in 1976, became one of the world's most widely grown crop variety by the early 1980s, boosting farmers' earnings by an additional $1.5 billion annually. While Asia's rice-growing area increased merely 17 per cent over the last twenty-five years, rice production in the region has doubled. Average yields increased 72 per cent in that period due, in large measure, to the new varieties. Asia's population, in the meantime, grew by 67 per cent.

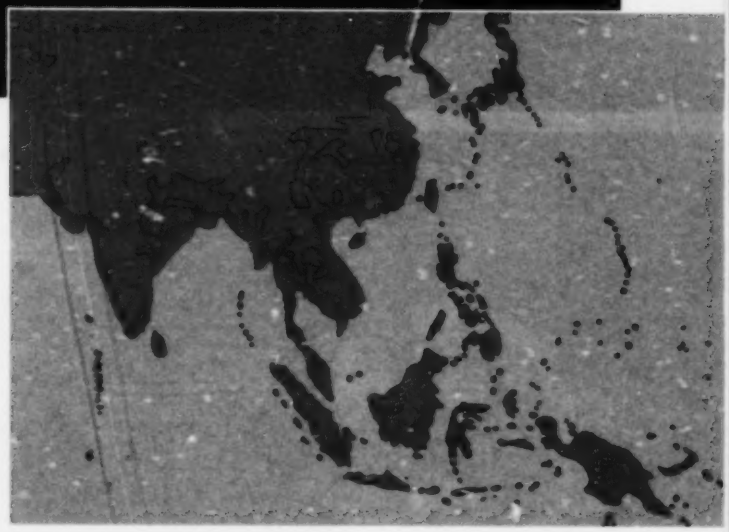
But now the "Green Revolution" is in trouble. Politicians, economists, and environmentalists worry about sustaining the rate of agricultural growth. Indeed, the rate of growth of Asian rice production has already fallen from three per cent a year in the 1970s to 2.2 per cent in the 1980s. Economists blame the decline on falling prices for rice. Farmers say their fertilizers and pesticides cost too much. Land devoted to rice production is also rapidly falling victim to new suburbs, shopping malls, and industrial parks. Pollution, flooding, salting of irrigation systems and loss of topsoil also contribute to declining yields.

"These negative factors are beginning to offset the positive effects of the technological revolution in agriculture," says Worldwatch Institute Director Lester Brown. Other experts say flatly that the "Green Revolution" has run its course. Whatever the case, the challenges confronting the scientific community at Los Baños are clearly enormous.

According to analysts at IRRI, a mere five per cent drop in Asian rice production would completely absorb current world surpluses. Global demand for rice is expected to rise from today's 460 million tons to 560 million tons by 2000, and 760 million tons by 2020 — a 65 per cent increase, the vast bulk of it in Asia. "Development of the early varieties helped buy us twenty years," says Dr. Hubert Zandstra, Deputy Director General for Research at IRRI. "But intensified efforts are needed to surpass the plateau in rice yields reached in the 1980s. That, and other breakthroughs, could buy us another twenty years."

Science has made it possible for farmers in Asia's fertile lowlands to get

A research assistant in IRRI's plant-breeding shed.



Rice-growing regions of Asia.

more rice from the same piece of land by creating more productive and faster maturing varieties, allowing two or three harvests each year. But the phenomenal growth in production has only come with time-consuming experimentation and sizeable investments — more fertilizers and pesticides, expanded irrigation systems, more labour and machinery, and in some instances, government price supports. Decades of high-intensity farming have seriously degraded the soils in some areas. And plant pests keep adapting themselves to resistant strains, putting increased pressure on IRRI scientists to come up with more resilient varieties just to sustain current yields.

Faced with these challenges, IRRI scientists advocate adapting the "Green Revolution" to less favoured areas that have thus far been overlooked, most notably the majority of the world's rice producers who raise rice without irrigation, and whose livelihoods depend on unpredictable monsoon rains. Because most of the modern rice varieties developed to date are vulnerable to drought, flooding, low temperatures and salinity, most rice farmers in these areas continue to cultivate hardy, but low-yielding, traditional varieties which have adapted over the centuries to local conditions.

One part of IRRI's new thrust then is adaptive breeding — bringing together the hardiness of these traditional varieties with the productivity of the modern varieties. This task is being tackled by the International Network for the Genetic Evaluation of Rice (INGER), established at IRRI with support from the United Nations Development Programme (UNDP).

Working with over 1,000 rice scientists in more than 100 countries, the Network is uniting the world's rice breeding capabilities into one knowledge-building system aimed at overcoming the vicissitudes and constraints of nature. Promising breeding lines are sent to the network centre in Los Baños where they are multiplied and distributed internationally, along with new IRRI varieties, for field testing.

"Last year we distributed 400,000 different seed packets for testing to dozens of nurseries throughout the developing world," says INGER co-ordinator Dr Duvvasula Seshu. "We make the results available to breeders everywhere."

Through the Network's diversified testing environment, more than 170 high-yielding varieties suited to different ecologies have already been released to farmers in nearly 100 countries. Moreover, INGER's tests have

IRRI scientists study rice root growth with a mini rhizotron, an underground television camera.

UNDP photos by David Kelley

Dr. Jagdish Ladha is experimenting with Sesbania, a nitrogen-fixing plant from Senegal.

identified several alternate gene sources for tolerance to various rice diseases, insects, adverse soils and low temperatures.

All this takes time, however. As a rule, only about one out of every hundred crosses made by rice breeders meets enough criteria to justify its release to farmers. And many undesirable traits are carried with the favoured ones.

But now, through the co-operative efforts of IRRI and the Rockefeller Foundation, the breakthroughs achieved in genetic engineering alteration are beginning to be applied to rice. Dr. Gurdev Khush, the IRRI plant-breeder mainly responsible for developing IR-36, is looking to new biotechnologies to "create an alternative plant type with a new architecture which can break the yield plateau."

Dr. Khush has a definite vision of what he is trying to create. "We feel that a rice plant with three or four tillers, very strong and sturdy stems, large panicles, thick dark green leaves, 80 to 90 centimetres tall, a strong root system, increased photosynthetic activity, and improved nutrient use will be the most productive under direct sowing conditions," he says. "We have identified donors for some of the above traits, but are still searching for others."

Bioengineering has already proven effective in improving certain types of plants, such as tomatoes and potatoes. But techniques that worked with other plants have repeatedly failed with rice and other cereals. Until five years ago, when the Rockefeller Foundation launched a major research initiative, little attention was paid to understanding the molecular biology of rice. "There are about 100,000 genes in any one plant," says Dr. Khush. "The main problem now is identifying the ten or twenty ones we want to alter to get the desired results."

Dr. Khush and other scientists are confident that within five to ten years rice yields can be raised by as much as 30 to 40 per cent, and that new traits for resistance to drought, floods, pests and other stresses can be bred into the new plant types.

A third strategic thrust at IRRI aims at testing and promoting biological alternatives to expensive chemical fertilizers and pesticides which can help poor farmers boost their output. One leader in this field is Dr. Jagdish Ladha, an IRRI soil microbiologist, who is experimenting with nitrogen-fixing plants, or "green manure," with financial support from UNDP. Dr. Ladha

Casiana Vera Cruz assists in plant pathology experiments.

has identified several very promising candidates, including *Sesbania rostrata*, a legume from Senegal. *Azolla microphylla*, an algae long used as an organic fertilizer in China, Viet Nam and Myanmar, is being studied by another IRRI soil microbiologist, Dr I Watanabe. "The presence of water in the rice fields provides the ideal growing conditions for algae such as azolla, which is the host for heterotrophic bacteria that fix nitrogen from the atmosphere," says Dr Watanabe.

Aquatic legumes such as azolla are the world's fastest nitrogen-fixing crops, maturing in only 40 to 50 days. They can be used as a substitute for chemical fertilizers and also as a highly nutritious animal feed. All a farmer needs is the seeds. Thanks to the extension work of Dr Watanabe and other IRRI scientists, azolla is being cultivated between rice crops on more than 5,000 hectares in the Philippines with good results.

Growing azolla and plowing it into rice fields has benefits other than simple nitrogen fixation. It also helps build soil biomass, which can be depleted through chemical fertilizer use. "The search for alternatives to fossil fuel fertilizers is the result not only of rising prices but also the need to maintain soil productivity and ecological sustainability," says Dr Ladha.

Experiments in Senegal and at IRRI's plots in the Philippines also show that green manuring with sesbania, which grows nitrogenous nodules on both roots and stems, can substantially boost the grain yield of succeeding rice crops. Dr Ladha's field trials demonstrated that plant nitrogen uptake and grain yields more than tripled. The next step is to introduce rice farmers to this promising alternative.

Such time-consuming but critical improvements in rice seeds and farming systems being pioneered at IRRI will help make the difference between feast and famine for Asia's growing populations as the region approaches the year 2000. Certainly the treasury of seeds and human talent harboured at Los Baños offers the world its best hope. ■

FINANCE

TUNISIA

The Move to Stir Tunisia's Sleepy Stock Market

By Emma Robson

Tunis, Tunisia — There is a lot of polite handshaking among the 16 men and one woman on the floor of the Tunis stock and bond exchange. The clock clicks to ten in the modern, low-ceilinged room and still the smiles and small talk continues. There is no hurry to begin, because the clerk has not yet wiped from the blackboard the prices of last week's trades, nor chalked up the quotes.

At 10:05 a gavel is struck on the edge of the pit and trading begins. There is no pushing or shoving, no swift hand signals. "I'm selling," says one broker dressed in a sober suit. "I'm buying," says another. The first trade of day — the equivalent of US$10,000 in an eight per cent government bond issued in 1988 — is completed. The brokers pencil in the trade on their record sheets. No one uses the exchange's two telephones.

Soon it is 10:30 and another bi-weekly trading session has closed on the 20-year-old bourse. Stocks and bonds worth $100,000 changed hands and most prices fell during the session. "There just wasn't much demand today," says Romdani Amor, who tracks trading activity for the bourse.

Such torpor is hardly surprising. "The financial market is a barometer of an economy's health," says Mustapha Kamel Nabli, president of the Tunis bourse. "Our economy has been sick."

When Prime Minister Zine al-Abdine Ben Ali was elected in late 1987, he inherited an ailing public sector and a string of economic woes, including declines in three of the country's main sources of foreign exchange. Oil prices were at a low point, agricultural production was in decline, and the tourist industry was threatened by fears of terrorism.

How long the torpor will last depends on the success of the Tunisian Finance Ministry's new reform programme, which reflects a government agreement with the International Monetary Fund and World Bank to restructure the economy. This year, the exchange plans to discard financially troubled or illiquid stocks and make a new list based on a set of stringent standards. These include detailed, audited financial statements and prospectuses and the public sale of at least 20 per cent of company share capital.

For its part, the bourse will bow to market forces and stop fixing prices before trading begins and reduce its 1.6 per cent tax on each transaction. The Finance Ministry, meanwhile, is offering tax breaks both to companies listing their shares for the first time and to investors in the new issues. "We intend to grow and foster true competitiveness," says Mr. Nabli. "To do that we want to attract the cream of Tunisian business."

In its reform efforts, Tunisia is receiving strong support and advice from the United Nations Development Programme (UNDP). Both UNDP and the

Slaheddine Ben M'Barek, managing editor of the Tunis daily *Le Temps*.

UNDP photos by Emma Robson

Mustapha Kamel Nabli, president of the Tunis bourse.

United States Agency for International Development have financed study trips to other exchanges and funded brochures on the market for schools and the general public. High level bourse officials have visited the financial markets of London, Paris and New York. "I was in New York in 1987, during the October 19 crash," says Hassine Trad, Secretary General of the bourse. "It was a real eye-opener."

The market's overhaul is long overdue. More than half of Tunisia's companies are state-owned. Most others are in the hands of families or small groups of investors. The stocks of only 100 companies are publicly traded. The Finance Ministry is keen to reverse the 60:40 ratio of public to privately-held companies as a means of energizing trade and industry, raising private savings, and attracting foreign investors. It is all part of a p'an to reorganize and sell off certain state enterprises, promote diversified exports, and liberalize the e conomy under a structural adjustment programme, begun in 1986. "Eventually, the government would like most present state enterprises to be owned by the public and traded on the exchange," says Mr. Nabli.

Reaching that goal will take time. The only survey of share ownership in Tunisia, conducted by the Association of Stockbrokers in 1976, estimates that one in 400 Tunisians owns stock. That compares with one in five in the United States. Most Tunisian companies are secretive. The fiscal system does not demand great transparency in accounting and bank credit remains the cheapest and most popular form of corporate financing.

"Companies, including many profitable ones, have shied away from the bourse," says Hamza Knani, President of the Association of Stockbrokers. "The public, besides not understanding the first thing about how the bourse works, is better off with savings accounts because most of the listed companies are in bad shape."

Liquidity is another problem. Only ten per cent of the outstanding shares of Société Tunisienne de Banque are freely traded, while Tunis Air has not been traded for years since all the shares are owned by Air France and the Tunisian government. "Most of the firms should have been thrown out years ago," says Mr. Knani.

Besides drawing up a new list of shares this year, the government plans to create independent stockbroking firms to end the near monopoly enjoyed by the 16 banks which now dominate trading.

To raise the interest of the general public, the bourse has launched a mass-media campaign and is coaching journalists at the major dailies and television stations in financial reporting. The move comes none too soon. "We really need the training," says Slaheddine Ben M'Barek, managing editor of the French language daily *Le Temps*. The Tunisian press ran a news agency report about the Wall Street October 13, 1989 "mini crash," which prompted a string of letters from readers demanding an explanation of the terms used. "What can we tell them?" asks Mr. M'Barek. "This Dow Jones index — and these billions of dollars that went up in smoke. I haven't got a clue what it all means."

It is in the interest of the Ministry of Finance to de-mystify the general public as soon as possible, for it is keen to develop the bond market in order to finance more of its budget deficit at home, rather than be subjected to the exchange rate uncertainties of foreign loans.

Mr. Nabli has farther-reaching ambitions. He sees the development of the bourse as a means of stimulating cross-border investment among the three Maghreb countries of Algeria, Morocco and Tunisia, and for Tunis to challenge the other countries in a race to become the premier financial centre of North Africa. ■

ENVIRONMENT

Blueprint for Bridgetown

A new urban development plan averts creeping chaos

Bridgetown's streets are jammed with cars and people.

By Cherie Hart

Bridgetown, Barbados — The abandoned warehouse was overrun with rats and surrounded by burned-out buildings. Even the owners had given up on the dilapidated property here. When entrepreneur Susan Walcott decided to open a restaurant in a room of the deserted waterfront structure, banks turned down her request for a loan. Only her mother had enough faith to finance her dream.

That was five years ago. Opening night of Ms. Walcott's Waterfront Café was such a success that she ran out of food after only a few hours. Today, her seafood restaurant is one of a dozen flourishing businesses in a 19th century rum warehouse in the Careenage, the waterfront heart of Bridgetown. "Improvement of the Careenage inspired a larger Bridgetown development plan," says Lionel Nurse, Chief Town Planner. "It started a major trend that is giving Barbados a whole new look."

More than a quarter of a million people live in the 430 square kilometres of Barbados. Nearly half reside in Bridgetown, the capital. But as recently as three years ago, the city had no urban development policy.

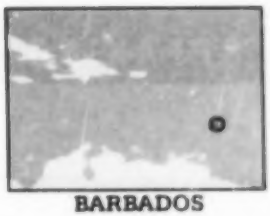
In July 1986, the Government of Barbados asked the United Nations Development Programme (UNDP) to help shape such a strategy. Completed a year later, the Greater Bridgetown Development Plan represents a blueprint for controlled growth reaching well into the next century. "Barbados is so small and developing so fast," says Mr. Nurse, "without a rational approach to plan for new construction, we would have chaos."

The US$103,000 UNDP project, which was carried out with the United Nations Centre for Human Settlements

The most rundown parts of the inner city are targeted for redevelopment.

UNDP photos by Cherie Hart

New roads will streamline traffic.



BARBADOS

(Habitat), has resulted in a scheme that allocates land for tourism, commercial and industrial development and for upgrading housing in depressed areas. "It has become the single most important document which we use when reviewing building applications," says Mr. Nurse. Today, every application for a house, office building or hotel is checked for compatibility with the master plan. In just two years, new building has changed the face of many areas of the country. A much needed four-storey parking garage is nearly completed in the centre of town — the result of the plan's ban on curb parking on all major roads.

Bridgetown's twisting streets and tiny sidewalks have proved more dangerous than quaint. Each year, 70 per cent of the traffic accident fatalities in the city are pedestrians. The plan calls for repair of existing sidewalks and the construction of new ones in the downtown area, near schools, along main roadways and beside bus-stops. Already, new stoplights and freshly constructed sidewalks line Eagle Hall Road which leads to the central business district.

Some downtown streets are so crowded that cars are unable to turn corners if other vehicles are parked by the curb. Cabs must often travel several blocks out of their way simply to make a turn. Bridgetown's traffic flow is being streamlined to relieve some of the congestion. Two new ring roads skirt the edge of town. New roundabouts are smoothing sharp corners of primary intersections.

In the upper end of Collymore Rock Road, five minutes northeast of Bridgetown's centre, a large insurance building is under construction. "Companies are learning that it is actually more convenient to build in an area just outside of town, than to try to deal with the congestion in the heart of the city," says Mr. Nurse.

The plan's designers contend that it is crucial to bring employment and services closer to new residential areas. Three miles northeast of Bridgetown, the housing division of Warrens is one of the first success stories in attracting business enterprises.

"The Warrens area has exploded," says Rohinton Sethna, UNDP Deputy Resident Representative in Barbados. "It used to be cane and scrub land. Now it has opened up as a major residential area with new businesses on the same site."

To protect Barbados' coastal regions, which are essential to tourism, the plan recommends that beach construction be set back at least 30 metres from the high water mark — to guard against erosion. Planting of trees along major new road developments is also being promoted for both soil conservation and aesthetics.

The poor of Barbados have not been forgotten. Twenty-four sites in the most rundown parts of Bridgetown's inner city have been targeted for redevelopment. Under the proposal, more than 2,400 of the urban poor will benefit from subsidized housing repair and construction, and improved roads and services.

While urban slums need further rehabilitation and overcrowding still plagues downtown Bridgetown, the plan has become an important tool in helping the country make the most of limited space. Thriving shops now occupy once abandoned shacks and office buildings dot suburban landscapes. "The Greater Bridgetown Development Plan," says Mr. Sethna, "is helping the Barbados government manage its physical planning into the 21st century." ■

Let's Stop Neglecting Africa's Small Savers

By Dr. George B. N. Ayittey

Since 1960, more than US$200 billion in foreign aid and credits has been pumped into Africa, with little to show for it. In fact, no less than 13 African nations are poorer today than they were at independence in the early 1960s. Falling commodity prices and mounting debt, which now totals $230 billion, are two prime reasons for this drop. But another is the fact that in many African countries, foreign aid did *not* supplement domestic saving. Instead, it sought to replace it.

Because many financial experts were used to thinking in terms of classic Western monetary models, they looked for domestic savings in African banks and other recognizable financial institutions. Finding little, they channelled their funds through the central banks, which in turn dealt with large commercial banks. Unfortunately, such credits don't reach the majority of Africans — who are still made up of small entrepreneurs and self-employed farmers. Because these Africans do not generally maintain bank accounts, it was mistakenly assumed that Africa's peasants do not save or borrow to invest.

Peasants, of course, have developed their own savings and credit institutions, which have existed for centuries. Foreigners were not solely to blame for neglecting them. University-educated Africans often dismissed them as too "backward and primitive" to be taken seriously.

Yet a World Bank study has shown that local revolving loan clubs in Niger, called *tontines*, account for 84 per cent of all loans in nearly 400 village households. Some of the 56 *tontines* surveyed have only four members, others more than 40. Their combined resources totalled $72,000. All of which prompted the Bank to recommend that such rural institutions constituted "a promising base for deposit mobilization."

Promising indeed. In much of Africa they offer the only means of financing new business. Yet *tontines* keep no records, demand no collateral, have no links to central banks, and are never reflected in a country's gross national product.

Among the Ewe tribe of my own country, Ghana, fishermen borrow from the "family pot" to buy new nets. Coercion is not applied, but if a family member fails to contribute he is essentially barred from access to the "pot," called *agbadoho*. Such small financing units among extended families are common all over Africa.

Dr. George B. N. Ayittey

"Speaking Out" is open to readers who wish to offer clear, well-supported positions on development issues. Contributions do not necessarily reflect the views of UNDP.

A second source of finance is the revolving credit schemes such as Niger's *tontines*. Similar loan clubs are called *susu* in Ghana and *stokfel* in South Africa. Typically, a group of around ten individuals contribute $100 each into a fund. When it reaches a prescribed level, say $1000, it is handed over to the members in turn.

Such an arrangement requires total trust. But it works. In Cameroon, according to James Brooke of the *New York Times*, conventional bankers complain of failure rates as high as 50 per cent on their loans. But the *tontines* work because their loans are backed by social pressure, a system familiar to Africans everywhere. Because *tontine* interest rates are competitive and red tape minimal, they have produced a liquidity crisis among some of Cameroon's big commercial banks. "We are empty," one banker told Mr. Brooke. "The *tontines* are drawing money out of the banking system."

Not surprisingly, such community-based lending groups are not unique to Africa. They are called *hui* in China, *tandas* in Mexico, *gamaiyah* in Egypt, *chit fund* in India, *arisan* in Indonesia, and *paluwagan* in the Philippines. In Bangladesh, the Grameen Bank has brought credit to the poorest of the poor. If a *tontine* were formed in the U.S., it would be immediately recognized as a credit union.

Clearly, an enlightened development strategy in Africa would help turn the *tontines* into modern credit unions. The advantages are obvious. To start with, in the process of identifying the vast number and varieties of *tontines*, governments and foreign aid specialists would begin to learn for the time just how much domestic African capital actually exists.

There is a danger here of trying to do too much in the name of modernization. To become more efficient, representatives of up to a dozen or so *tontines* might be consolidated under one roof. It need only be a hut. One or two representatives might be nominated to receive training in basic record keeping. But no fancy buildings, thank you, and please, no intimidating paper work. Finally, it would behoove governments and foreign donors to supplement the funds available for the smallest *tontines* in the poorest, most remote areas where capital is most needed but least available.

Already, there are signs that some governments and foreign donors are on the right track. The International Fund for Agricultural Development is assisting a village development fund in Mali, where drought-stricken farmers are drawing loans averaging $350 at nine per cent interest, with a repayment rate that so far is close to 100 per cent.

In the Congo, the government has helped found 19 self-managing rural Mutual Savings and Credit Societies, known as MUCODECs, with a total of over 7,000 participants. According to the *African Letter*, a Canadian fortnightly, the government provides a central management team to supervise the MUCODECs, but each unit is run by its members, who see to it that repayment rates remain at an exemplary 90 per cent.

Throughout the continent, such institutions get money to the poor and the illiterate who, under normal circumstances, would never get in to see a bank's loan officer in their lifetime. In fact, what bank in Africa would lend $300 to a farmer who can't read or write, has no collateral and only wants to own a draft animal to clear an extra hectare of land to boost his yields? But who knows? On a continent that has lost the ability to feed itself, giving all those supposedly backward and primitive *tontines* a helping hand could make a world of difference. ■

Dr. George B. N. Ayittey, a Bradley Resident Scholar at the Heritage Foundation in Washington D.C., is the author of "Indigenous African Institutions," to be published by the CATO Institute in 1990.

NEWSREEL

GLOBAL MEETING SPELLS OUT THE IMPORTANCE OF LEARNING

Jomtien. Speaking at the World Conference on Education for All that took place here in March, UNDP Administrator William H. Draper III said that it is "within our reach today to be able to offer every child a primary school education before the turn of this century." The task is an exciting one, he said, but "is manageable only if we mobilize the necessary political will." More than 900 million people, or a quarter of the world's adult population, are unable to read or write, and at least 100 million children lack access to primary education.

Mr. Draper outlined a four-point action plan at the Conference in Thailand to achieve this goal by the year 2000. It calls for

- formulation of national human development strategies that include education as an integral component;
- preparation of financial plans by developing countries to achieve basic education for all over the next ten years;
- restructuring priorities in developing countries to release more resources for education;
- a global compact to ensure more external aid to help implement the education targets of developing countries.

The Conference brought together over 1,200 government leaders, educators and representatives from international and non-governmental organizations to examine ways to wipe out illiteracy and improve the quality and availability of education worldwide.

UN photo by John Isaac

Opening day at UN Headquarters in Windhoek William H. Draper III (*left*) congratulates Namibian Foreign Affairs Minister Theo-Ben Gurirab, as UN Secretary-General Javier Pérez de Cuéllar looks on.

NAMIBIA WELCOMES UNDP

Windhoek. UNDP's newest field office opened here in March, as Namibia marked its full independence from South Africa. This latest addition brings to 113 the number of UNDP field offices operating worldwide. UN Secretary-General Javier Pérez de Cuéllar and UNDP Administrator William H. Draper III were on hand for Namibia's independence festivities, and officially opened the UN's offices in Windhoek.

Mr. Draper announced that a UNDP Trust Fund for Namibia — established during a donors meeting in Oslo last September — has received $4.5 million in pledges from Finland, Norway and Belgium. "We are all greatly indebted to these nations and wish to remind others that this fund remains available as a vehicle for resource mobilization," Mr. Draper said.

Of the amount pledged, $1.7 million has been earmarked for such sectors as health, education and civil aviation. Sixty UN Volunteers are already working in these areas, and more will be needed to compensate for South African manpower that has already been withdrawn.

Mr. Draper has appointed David McAdams to be the first Resident Representative in Namibia. Mr. McAdams is a veteran senior officer and an Africa specialist for UNDP. He will help launch the agency's first technical assistance programme for that country, which has been budgeted at $10.6 million for the next two years. The new African country has specifically requested UNDP's help in promoting private sector growth.

HUNGRY MOZAMBIQUE

New York. Charles H. Larsimont, the outgoing UNDP Resident Representative in Mozambique, told journalists here that $132 million is urgently needed to feed 1.6 million Mozambicans displaced by guerrilla war. Mr. Larsimont was en route to a new assignment as Resident Representative in Bangladesh. He helped draft a report on the situation in Mozambique for the Secretary-General in preparation for an emergency fund-raising appeal that took place in New York last month. The amount of food requested is "only enough for a survival diet, not even a working person's diet," Mr. Larsimont said. The modest target reflects realistic expectations: only 60 per cent of the $362 million sought last year was pledged by donor countries.

In addition to the funds needed for food, another $35 million is required just to transport it to isolated and war-ravaged locations by air, barge and truck. "Lack of security is our main concern," Mr. Larsimont said. The last time his plane taxied for take-off, it hit a land mine, and a new nose wheel assembly had to be flown into the grass airstrip.

"Without peace, the food emergency will not end, and with peace, it will be some time before adequate internal food supplies can be generated," Mr. Larsimont said. He added that Mozambique will require 500,000 to 600,000 tonnes of food donations annually over the next few years.

Edited by Sid Kane

Borrowed From Our Future

A Video on the Environment

Every day there is more bad news about the environment. Fertile farmland is overrun by barren deserts. Tropical forests are levelled, wiping out entire species of plants and animals. Chlorofluorocarbons ravage the ozone layer, threatening our climate.

UNDP's new colour video, "Borrowed From Our Future," surveys these and other environmental problems. But it also shows that our planet need not be doomed. From Bolivia and Ethiopia to India and Morocco, countries are working with UNDP to protect the environment while attacking the roots of poverty.

The 20-minute video is available in English (NTSC, PAL or SECAM). Cost: $15. Cheques or money orders in US dollars may be sent to:

United Nations Development Programme
Television and Film Service
One UN Plaza, Room DC1-1502
New York, NY 10017, USA

UNDP

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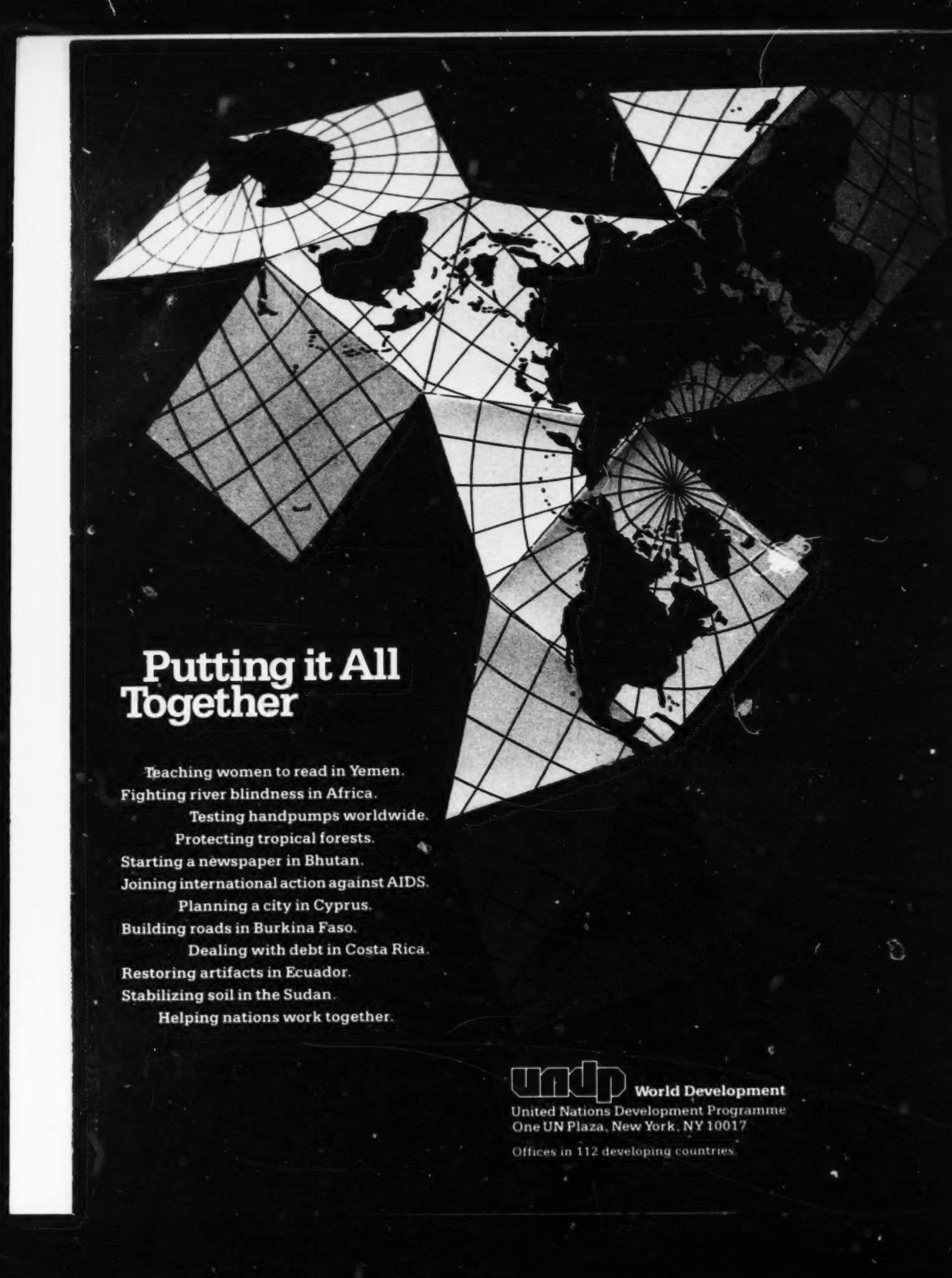

Putting it All Together

Teaching women to read in Yemen.
Fighting river blindness in Africa.
Testing handpumps worldwide.
Protecting tropical forests.
Starting a newspaper in Bhutan.
Joining international action against AIDS.
Planning a city in Cyprus.
Building roads in Burkina Faso.
Dealing with debt in Costa Rica.
Restoring artifacts in Ecuador.
Stabilizing soil in the Sudan.
Helping nations work together.

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